IN THE CLAIMS:

Please amend claim 1 as follows. Please cancel claims 6 and 7, without prejudice or disclaimer.

1. (Currently Amended) A gas sensor device comprising:

an insulating substrate having two faces;

at least one separate sensor element having respective contact pads, each separate sensor element being made from thin semiconductor film and being applied to a single face of the substrate;

a resistive heating element for heating to a predetermined temperature the substrate and the semiconductor film applied to it, the heating element being applied to said single face of the substrate and being equipped with respective contact pads for connection to an electrical power source, wherein the resistive element presents a serpentine pattern with a plurality of curves and wherein each semiconductor film is located in a curve of the serpentine.

2. (Original) The gas sensor device according to claim 1, wherein the device comprises a plurality of separate sensor elements, preferably from two to four sensors, each separate sensor element being applied to said single face of the substrate.

3. (Original) The gas sensor device according to claim 1 or 2, wherein the substrate is made of alumina.

4. (Original) The gas sensor device according to claim 1 or 2, wherein the substrate is made of silicon coated with an insulating layer.

5. (Original) The gas sensor device according to claim 1 or 2, wherein the substrate has a surface area of between 1 and 25 mm^2, preferably between 4 and 9 mm^2.

6.-7. (Cancelled)

8. (Original) The gas sensor device according to claim 1 or 2, wherein the contact pads comprises a first layer made from titanium, deposited on the substrate, and a second superposed layer of platinum.

9. (Original) The gas sensor device according to claim 1 or 2, wherein the contact pads comprises a first layer made from tungsten, deposited on the substrate, and a second superposed layer of platinum.

10. (Original) A gas sensor device comprising:

an insulating substrate having two faces;

at least two separate sensors elements having respective contact pads, each separate sensor element being made from thin semiconductor film in contact with the respective contact pads and being applied to a single face of the substrate;

a resistive heating element for heating to a predetermined temperature the substrate and the semiconductor film applied to it, the heating element presenting a serpentine pattern with a plurality of curves, being applied to said single face of the substrate and being equipped with respective contact pads for connection to an electrical power source;

each contact pads for connection of the semiconductor films including a U-shaped element, whose branches, which are in contact with a respective semiconductor film, extend into the curves of the resistive heating element.

11. (Original) The gas sensor device according to claim 10, wherein the contact pads comprises a first layer made from titanium, deposited on the substrate, and a second superposed layer of platinum.

12. (Original) The gas sensor device according to claim 10, wherein the contact pads comprises a first layer made from tungsten, deposited on the substrate, and a second superposed layer of platinum.

13. (Original) The gas sensor device according to claim 10, wherein the semiconductor film is made of tin oxide.

14. (Original) The gas sensor device according to claim 10, wherein the semiconductor film is made of zinc oxide.

15. (Original) The gas sensor device according to claim 10, wherein the semiconductor film is made of iron oxide.

16. (Original) A method for making a sensor device according to claim 1 or 10, comprising the steps of:

depositing by sputtering at least one separate sensor element made from thin semiconductor film on a single face of the substrate;

depositing metal adhesion layers on the substrate face to make the contact pads for connection of the sensor elements and of the resistive heating element; and

depositing over the adhesion layers on the substrate face a conductive film of noble metal according to a pattern that forms the resistive heating element and a second conductive layer of noble metal.

17. (Original) The method for making a sensor device according to claim 16, wherein the step of depositing metal adhesion layers makes a layer of titanium for the contact pads for connection of the sensor elements and of the resistive heating element.

18. (Original) The method for making a sensor device according to claim 16, wherein the step of depositing metal adhesion layers makes a layer of tungsten for the contact pads for connection of the sensor elements and of the resistive heating element.

19. (Original) The method for making a sensor device according to claim 16, wherein the step of depositing by sputtering a separate sensor element is made for a plurality of time, whereby a plurality of separate sensor elements are deposited on a single face of the substrate.